

Application S.N. 10/023,333

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Reply to Office Action dated May 23, 2005

Amendments to the Specification:

Replace paragraph [0026] and [0027] with the following:

[0026] Mix tube 14 (Figs. 2,4,8,9) is formed of a suitable plastic material and includes a ~~monolithic~~, single piece, tube member 24 (as best seen in Fig. 9), and a plurality of mix elements 26 and 28 comprising alternating left and right hand helical elements positioned in stacked fashion within tube member 24. The upper end of tube member 24 defines a large mouth mounting portion 24a and the lower end of the tube member defines a conical nozzle tip portion 24b which is stepped at 24c to allow the tube member to be selectably clipped at a selected step to selectedly vary the size of the discharge opening of the tube member. Mix tube 14 may comprise, for example, a tube assembly available from ConProTec, Inc. of Salem, New Hampshire under the tradename "STATOMIX"®.

[0027] Dispensing means, such as tip insert or nozzle insert, hereinafter referred to as ~~monolithic~~, single piece, insert 16 (as best seen in Fig. 8) is formed of a suitable plastic material and is shaped and configured to fit within the lower end 24b of tube member 14 with a conical external surface or main body portion 16a of the insert positioned within an inner conical nozzle surface or conical bore 24e defined within the lower end 24b of the tube member with an outwardly extending annular flange or upper flange portion 16b of the insert seating on an inwardly extending annular shoulder 24d defined by the tube member at the intersection of the main body portion of the tube member and the lower end 24b of the tube member.

Replace paragraph [0033] with the following:

[0033] In operation, synthetic resins A and B are supplied continuously by hoses 10c and 10d to the material valve where they flow individually through the valve and are discharged individually through discharge outlet portion ~~10c~~ 10b into the upper end of the tube member 24. The two-part resins flow downwardly through the tube member 24, engaging successive opposite helixes 26 and 28 and being

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successively folded over in a compounding manner so that they emerge at the upper end of insert 16 as a totally homogenous mix. The mixed material moves downwardly through the insert 16 and is discharged as a mixed material bead C at the central aperture 22e of the dispense tip. As the bead emerges from the aperture 22e it is acted upon by the air streams moving downwardly through the flutes 18a, 18e, radially inwardly through the flutes 18g, further radially inwardly through the annular passage 30, and thence along the conical surface 22d. As the air streams impinge upon the emerging material bead C they act to impart a swirling movement to the bead so that the bead C is deposited as a compact spiral spray pattern along a surface adhesive path 32a on a part 32 in response to relative movement between the nozzle assembly and the part 32. Relative movement between the nozzle assembly and the part 32 may be achieved by movement of the part 32 past the nozzle assembly but more typically will be achieved by movement of the nozzle assembly by an associated robot programmed to move the nozzle assembly along the adhesive path 32a. It will be understood that air is delivered to air inlets 20d through suitable hoses connected with suitable sources of pressurized air. The air supply pressure may be varied during the course of the dispense cycle to compensate for changes in robot tool tip speed and/or changing height between the discharge orifice and the surface to which the swirled adhesive pattern is applied.